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| 09/909,969 | 07/23/2001 | Peter J. Edmonson | H310609 US | 2290 |
| 7590 12/01/2004 | | | EXAMINER | |
| GOWLING LAFLEUR HENDERSON LLP | | | PATHAK, SUDHANSHU C | |
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| Suite 560 | | | PAPER NUMBER | |
| 120 King Street West | | | 2634 | |
| Hamilton, ON L8N 3R4 | | | DATE MAILED: 12/01/2004 | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/909,969

Applicant(s)

EDMONSON ET AL.

Examiner

Sudhanshu C. Pathak

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 23rd, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on July 23rd, 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1-to-10 are pending in the application.

Specification

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

3. The Specification on Page 6, Paragraph 28, line 5, referring to Fig. 2

discloses "properties of the reflectors at port 32b such that a modified" this should actually be "properties of the reflectors at port 30b such that a modified" as is disclosed in Fig. 2 wherein there is no element identified as "32b".

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thornton*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-2 & 6-7 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 32 of U.S. Patent No. 6,462,698 that is dependent on Claim 31 that is further dependent on Claim 20 of U.S. Patent No. 6,462,698 and encompasses the subject matter of both the parent claims. Although the conflicting claims are not identical, they are not patentably distinct from each other because the essentially claim the same subject matter.

Claims 1 & 6 disclose a communication system for two way exchange of information using binary coded waveform having a base unit and a remote unit operable to transmit and receive electromagnetic radiation waveforms. This subject matter is disclosed in Claim 32 of (6,462,698) which discloses a wireless (communication via electromagnetic waveforms) communication system comprising an interrogation system (base unit) (Claims 31 & 32),

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which transmits (claim 31) and receives electromagnetic signals (Claim 32) and a communication system (remote unit) (Claim 20), which also transmits (Claim 32) and receives electromagnetic signals (Claim 31). Claims 1 & 6 also discloses the remote unit having a first surface acoustic wave device to receive an electromagnetic signals and convert it to a corresponding surface acoustic wave to travel from the input to the output and be reflected back to the input wherein the transducer connected to the output of the SAW device to receive information and modify the reflected wave. This subject matter is disclosed in Claim 32 (more specifically subject matter in the parent Claim 20) of 6,462,698 which discloses a first SAW device configured to produce a SAW wave output when a communications signal is received by the antenna and a second SPUDT type IDT functions as a transducer connected to the output of the first SAW and the termination circuit connected to the second SAW functions as a source to provide information to the second SPUDT thereby modifying the reflected SAW waveform which is incorporated in the received waveform and is then transmitted back to the interrogation system.

Claims 2 & 7 are dependent on Claims 1 & 6 respectively and embody the limitations of the parent claims. Claims 2 & 7 further disclose that the first transducer is a microphone. This subject matter is disclosed in Claim 32 (more specifically subject matter in the parent Claim 20) of 6,462,698 which discloses a second SAW device which functions as a transducer (microphone) wherein it is configured to produce an electric signal output when excited by a surface acoustic waveform.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2, 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruile et al. (6,556,146).

Regarding to Claims 1, 6, Ruile discloses a communications system between two remote units each capable for transmitting and receiving radio frequency signals of various types including burst pulse, an FM-CW signal, a chirped pulse (Fig.'s 1-3 & Column 1, lines 30-67 & Column 2, lines 50-65 & Claim 1). Ruile discloses a remote transmitter transmitting an interrogation RF signal to a receiver (surface wave technology sensor) for the purpose of determining a sensed parameter depending on the application of the sensor and the receiver with its evaluation device is designed for radio reception and for evaluation of the change, influenced by the effect of the variable impedance element responds back to the transmitter (Fig.'s 1-3 & Abstract, lines 1-4 & Column 1, lines 60-67 & Column 2, lines 22-65). Ruile further discloses the sensitive element is an impedance which can be a but not limited to resistive element, magnetoresistor, photoresist, variable capacitance diode or a coil arranged in a magnetic field, temperature-sensitive resistors, moisture sensors etc. depending on the parameter to be

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interrogated or the sensor application (Abstract, lines 1-4 & Column 2, lines 5-21 & Column 3, lines 1-10 & Column 5, lines 4-15). Ruile discloses that a rf signal transmitted by the transmitter is received at the receiver antenna which supplies the electromagnetic signal to the (first) SAW device which converts the electrical signal into an acoustic wave which propagates to another (second) SAW device which then converts the acoustic wave back into an electrical signal for which the sensitive element acts as an electrical terminating impedance (Fig.'s 1-3, elements 30, 23, 26, 12 & Column 3, lines 20-50). Ruile further discloses implementing a the SAW devices with double mode operation wherein it converts a surface wave to an electrical wave in one direction and an electrical wave to a surface wave in another direction (Column 1, lines 15-35). The reflected (transmitted) signal from the receiver (sensor), in response to the received interrogated signal, is dependent on the terminating impedance, which is converted to the acoustic wave for propagation through the substrate (Column 2, lines 22-65 & Column 3, lines 45-67 & Column 4, lines 1-8). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Ruile teaches a communication system comprising multiple transceivers implementing SAW sensor technology comprising a SAW device for receiving and converting the electromagnetic signal into a SAW wave and reflecting the SAW wave, modified by the terminating impedance element, back to the transmitting transceiver incorporating the information of the terminating impedance. However, Ruile does not specify the exchange of information between the

transceivers using binary coded waveform and Ruile also does not disclose a source for sending the SAW transducer information to modify the reflected wave. There is no criticality of exchanging information using a binary coded waveform this is a matter of design choice of the system where the transceivers (sensors) are implemented. Furthermore, the terminating impedance as described in Ruile is analogous to the source for providing the information so as to modify the reflected wave, since the terminating (variable) impedance reflects RF if the impedance is not matched and the reflection is dependent on the mismatch so the reflected wave is dependent on the terminating impedance whose value or characteristic is dependent on the sensed parameter dependent on the application.

Regarding to Claims 2, 7, Ruile discloses a communication system comprising multiple transceivers utilizing radio-interrogated surface acoustic wave sensor technology as described above. Ruile further discloses a SAW transducer operating in double mode operation for converting electromagnetic signals into a surface acoustic wave and vice versa (Column 1, lines 15-35). Ruile also discloses the receiver antenna connected to a first SAW device for converting the electromagnetic signal into a SAW wave which propagates through the substrate to another (second) SAW device which then converts the SAW wave into an electromagnetic signal for interfacing with the terminating impedance (Fig.'s 1-3, elements 24, 23, 25, 26, 12 & Column 3, lines 20-62). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Ruile teaches a second SAW device

which converts a SAW (mechanical) into an electromagnetic (electric) wave, which is analogous to a function performed by the microphone, thus satisfying the limitation of the claim.

7. Claims 3-5, 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruile et al. (6,556,146) in view of Ostermayer (On the Noise Behavior of a SAW Convolver Used as a Matched filter; IEEE Transactions on Microwave Theory and Techniques; Vol. 49, No. 4; April 2001) in further view of Fiorletta (5,289,160).

Regarding to Claims 3-5 & 8-10, Ruile discloses a communication system comprising multiple transceivers utilizing radio-interrogated surface acoustic wave sensor technology as described above. However, Ruile does not disclose SAW device, to receive the binary electromagnetic radiation, comprising a filter arrangement to decode the binary electromagnetic radiation waveform, and a transducer to actuate the decoded output.

Ostermayer discloses a surface acoustic wave (SAW) convolver implemented in various communications systems such as spread spectrum communications (wireless), measurement systems, sensing systems for performing real time correlation for signal identification / detection (Page 779, Introduction, lines 1-12). Ostermayer also discloses implementing the SAW convolver to decode multiple coded signals such as OOK, PSK, QPSK, and BPSK etc. (Page 780, right-hand column, lines 1-8 & Fig. 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that Ostermayer teaches implementing a SAW convolver for signal

detection and identification for a variety of coded signals, and this convolver can be implemented in transceivers as described in Ruile, so as to detect and decode the incoming (received) interrogation signal, thus accurately detecting the signal in a highly noisy environment. However Ruile in view of Ostermayer does not disclose a transducer to actuate the decoded output.

Fiorletta discloses a wireless communication system implemented as a sensor monitoring system comprising a SAW sensor (Fig. 6, Abstract, lines 1-13 & Column 3, lines 1-50). Fiorletta also discloses the sensor system comprising a transducer to actuate the received / decoded signal so as inform the user the message to be conveyed (Fig. 6, element 613 & Column 9, lines 10-30). Fiorletta also discloses the transducer to be either an audio or a visual transducer or both (Column 9, lines 23-28). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention that Fiorletta teaches a transducer for implementing in a sensor system so as to inform the user the message to be communicated between the transceivers either being a audio signal message or a visual message, and this can be implemented in the sensor system as described in Ruile in view of Ostermayer so as to listen to the message transmitted by the interrogation signal transmitted by the transmitter. Furthermore, there is no criticality in implementing the transducer to be a speaker; this is a matter of design choice dependent on the application where the SAW sensor is implemented.

Conclusion

8. The prior art made of record and not relied upon in this Action is considered pertinent to applicant's disclosure, it is recommended to the applicant to amend all the claims so as to be patentable over the cited prior art of record. A detailed list of pertinent references is included with this Office Action (See Attached "Notice of References Cited" (PTO-892)).
9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.
 - If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on (571)-272-3056
 - The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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- Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak



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